

INDUSTRIAL DUSTS

- 240 Silicosis Risk in Relation to Silica Dust in the Environment and to Length of Exposure in a Ceramics Factory. F. M. Troisi and N. Zurlo. *Med. lavoro* 45, 614-623 (Nov. 1954). Italian with English summary.

The authors conducted a survey of a glazed tile factory, including airborne dust counts and determinations of free silica in the raw materials and settled and airborne dusts. Both the clay and ingredients of the glaze contributed to the dust. The atmospheric concentration of quartz under 5 microns in diameter varied from 196 particles per cc. to below 30, depending upon location. Three cases of early silicosis were found among 22 selected employees who had worked at the same tasks for over 20 years, although annual x-ray examinations had shown no cases of silicosis. Control measures are discussed.

-- Cond. from Bull. Hyg.

- 241 Statistical Synthesis of the Chemical-Petrographic Determinations of Free Silica in Some Argillaceous Materials. E. Occella. *Med. lavoro* 45, 715-720 (Dec. 1954). Italian with English summary.

The author reports on the examination of about 600 samples of clay and clay-like materials used in industry. The data are graphically charted and tabulated according to free crystalline silica content. The samples representing materials used in brickmaking are also charted separately. Only quartz particles under 5 microns need to be considered when dealing with the silicosis hazard, and the brick-making clays are classified according to the content of the fine quartz particles. Practically all the samples (excluding kaolins) contained quartz in varying proportions up to 55%, averaging 20%. The silicosis hazard from any one material is directly proportional to the degree of subdivision of the free silica particles, and this degree of subdivision may be inversely proportional to the total free silica content. However, the considerations applying to the raw material may not necessarily hold for the atmosphere of the place of work, where, on the one hand, baking of the ware may increase the temper of the material so as to favor further subdivision of the quartz and, on the other hand, the hazard may entirely disappear because the quartz reacts and combines with other oxides which are available at certain temperatures.

-- Cond. from Bull. Hyg.

- 242 Particle Size and Petrographic Analysis of Some Argillaceous Materials. E. Occella. *Med. lavoro* 45, 721-729 (Dec. 1954). Italian with English summary.

This paper deals with a total of nine mineral samples of raw materials used in the manufacture of earthenware, ceramics, bricks, and tiles. The loose and semi-loose particles were separated by sifting through screens of 4 to 400 mesh. Smaller particles down to 10 microns were analyzed by appropriate mechanical apparatus, and the still finer constituents, down to 1 micron, were determined by the polarizing microscope. Durkan's technique (IHF Abst. 1146, Dec. 1946) was then used to estimate the free silica content of each sample and of each of its granulometric groups. The results are tabulated and shown graphically. In general the samples with a lower quartz content were richer in the finer and more dangerous quartz particles. Therefore, in assessing the silicosis hazard from any particular raw material, it is not sufficient to estimate the overall free crystalline silica content without studying the granulometric distribution of particles of less than 5 microns in diameter.

-- Cond. from Bull. Hyg.